

# POSITION DESCRIPTION

1. Agency PDCN 80096

<b>2. Reason for Submission</b> Redescription New  Reestablishment Other Explanation (Show Positions Replaced)	<b>3. Service</b> HQ Field X	<b>4. Empl Office Location</b>	<b>5. Duty Station</b>	<b>6. OPM Cert #</b>
		<b>7. Fair Labor Standards Act</b> Not Applicable	<b>8. Financial Statements Required</b> Exec Pers Financial Disclosure Employment & Financial Interests	<b>9. Subject to IA Action</b> Yes X No
		<b>10. Position Status</b> Competitive Excepted (32 USC 709) X SES (Gen) SES (CR)	<b>11. Position is</b> Supervisory Managerial Neither X	<b>12. Sensitivity</b> Non-Sensitive Noncritical Sens Critical Sens Special Sens

**15. Classified/Graded by**  
 a. US Office of Pers Mgt    b. Dept, Agency or Establishment X    c. Second Level Review    d. First Level Review

Official Title of Position	Pay Plan	Occupational Code	Grade	Initials	Date
Electronic Integrated Systems Mechanic	WG	2610	12	rmp	28 Feb 95

<b>16. Organizational Title</b> (If different from official title)	<b>17. Name of Employee</b> (optional)
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<b>18. Dept/Agency/Establishment</b> - National Guard Bureau  a. <b>First Subdivision</b> - State Adjutant General  b. <b>Second Subdivision</b> -	<b>c. Third Subdivision</b> - <b>d. Fourth Subdivision</b> - <b>e. Fifth Subdivision</b> -
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**19. Employee Review.** *This is an accurate description of the major duties and responsibilities of my position.*      Employee Signature /Date (optional)

**20. Supervisory Certification.** *I certify that this is an accurate statement of the major duties and responsibilities of this position and its organizational relationships, and that the position is necessary to carry out Government functions for which I am responsible. This certification is made with the knowledge that this information is to be used for statutory purposes related to appointment and payment of public funds. False or misleading statements may constitute violations of such statutes or their implementing regulations.*

a. Typed Name and Title of Immediate Supervisor  Signature _____ Date _____	b. Typed Name and Title of Higher-Level Supervisor/Manager (optional)  Signature _____ Date _____
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<b>21. Classification/Job Grading Certification:</b> <i>I certify this position has been classified/graded as required by Title 5 USC, in conformance with USOPM published standards or, if no published standards apply directly, consistently with the most applicable standards.</i>  Typed Name and Title of Official Taking Action ROGER M. PARRISH  Signature _____ Date 28 Feb 95 //signed//	<b>22. Standards Used in Classifying/Grading Position</b> USOPM JGS for Electronic Integrated Systems Mechanic, WG-2610,  <b>Information For Employees.</b> <i>The standards and information on their application are available in the personnel office. The classification of the position may be reviewed and corrected by the agency or OPM. Information on classification/job grading appeals is available from the personnel office.</i>
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23. Position Review	Initials	Date	Initials	Date	Initials	Date	Initials	Date
a. Employee (Opt)								
b. Supervisor								
c. Classifier								

**24. Remarks:**  
 CRA95-1002

**25. Description of Major Duties and Responsibilities (SEE ATTACHED)**

a. INTRODUCTION:

This position is located within a National Guard aircraft maintenance organization. Its purpose is to perform either on- or off-equipment maintenance on one or more complete electronic integrated systems associated with the assigned aircraft and/or maintenance on automatic flight control systems, instrument systems, and inertial and radar navigation systems.

b. DUTIES:

(1) Performs maintenance on one or more complete electronic integrated systems such as the Fuel Savings Advisory System (FSAS), Self Contained Navigation System (SCNS), All Weather Landing System, and Malfunction Detection, Analysis, and Recording System (MADAR). Completes operational checks, inspections, tests, and trouble shooting of line replaceable units (LRUs) which are linked with the integrated systems and, also a number of LRUs which are independent or associated with nonintegrated systems. Isolates unusual malfunctions using technical orders, schematics and wiring diagrams, tools, and test equipment including automatic test equipment. Solves problems by analyzing installation, circuitry, and operating characteristics of the systems. Adjusts and aligns system sensors, transmitters, amplifiers, power supplies, display devices, controls, transponders, actuators, servos, computers and other related components. Removes faulty LRUs for shop repair. Installs serviceable components into aircraft and performs total systems alignment and harmonization in accordance with existing technical orders and directives. Accomplishes technical order compliances and modification of components and systems and completes systems checkout for proper operation. Maintains, modifies, calibrates and inspects a wide variety of user test, measurement, and diagnostic equipment (TMDE).

(2) Performs maintenance on automatic flight control systems, instrument systems, communications and navigation systems, and inertial navigations systems. Completes bench check, testing, repair, inspection, modification, programming, reprogramming, mating, adjusting, alignment, and analyzing of LRUs and shop replaceable units (SRUs). Uses a variety of test equipment such as automatic test equipment (ATE), oscilloscopes, frequency counters, phase-angle voltmeters, optical alignment equipment, digital pitot-static testers, programming units and special purpose test analyzers. Tests and troubleshoots solid state electronic assemblies and subassemblies such as circuit cards, modules, rate generators, electronic control amplifiers, electro-mechanical assemblies, random access memories, programmable read only memories, and various integrated circuits. Identifies faulty part and repairs to level authorized. Reassembles unit after repair, performs alignment and makes shop checks.

(3) Recommends methods to improve equipment performance, technical data, and maintenance procedures by reporting hardware and software malfunctions, initiates material deficiency reports both on equipment and in technical data, and assists in design changes as

necessary. Conducts debriefing of aircrews to determine the nature of system malfunctions then documents all maintenance performed and records information related to the system, LRUs, or SRUs on both aircraft and historical records.

(4) Conducts on-the-job training on assigned systems and related support equipment and tasks to include classroom instruction as necessary.

(5) Processes and accounts for due-in from maintenance (DIFM) supply assets. Ensures that material and equipment are properly stored, protected and maintained and that funds are not obligated for material or parts without proper justification.

(6) Prepares for and participates in various types of readiness evaluations such as Operational Readiness Inspections (ORI), Inspector General (IG) inspections, and Unit Effectiveness Inspections and mobility and command support exercises. May be required to perform additional duties such as structural fire fighting, aircraft fire/crash/rescue duty, serve as a security guard, remove snow, load and handle munitions, launch/recover and service aircraft, operate heavy equipment, maintain facilities and equipment, or serve as a member of a team to cope with natural disasters or civil emergencies. Complies with safety, fire, security, and housekeeping regulations.

(7) Performs other duties as assigned.

c. SKILL AND KNOWLEDGE:

(1) Ability to apply electronic theories and practices to identify, isolate and repair malfunctions in one or more complex integrated systems where knowledge of the entire system is necessary to interpret error data and trace back through a number of units of the system to locate deficiencies. Thorough knowledge of the principles of digital and analog circuits, electromechanical devices, solid state devices theory, digital techniques, synchro/servo operation and integrated circuit theory. Ability to interpret and trace schematic, logic and wiring diagrams and use a wide variety of test, measurement, and diagnostic equipment (TMDE). Ability to perform algebraic and trigonometric formulas to solve work related problems.

(2) Working knowledge of the Technical Order system and other technical publications and directives relating to the section. Current certification in high reliability soldering techniques, as well as electrostatic discharge protective techniques.

d. RESPONSIBILITY:

Works under general supervision. Independently accomplishes assignments. The supervisor provides technical guidance and assistance on highly unusual or controversial problems. Work is accomplished in accordance with technical orders, manufacturer handbooks and specifications, and engineering data. Work is subject to spot check and quality control checks upon completion for acceptability and adherence to instructions and established standards.

e. WORKING CONDITIONS:

Work is performed inside in well lighted, heated, and ventilated areas; or on aircraft in high or restricted places, in conditions of heat or cold, and occasionally outside in inclement weather. Subject to injuries such as electrical shock, cuts, bruises, burns caused by electrical or RF energy, or by soldering irons. Works in a high noise environment.

f. PHYSICAL EFFORT:

Physical effort involves lifting components and equipment and working in tiring and uncomfortable positions. Items lifted generally weigh up to 40 pounds. Assistance is usually available with heavier items. There is frequent standing, walking, bending, crouching, reaching and stooping.

**EVALUATION STATEMENT**

A. Title, Occupational Code and Grade: Electronic Integrated Systems Mechanic, WG-2610-12.

B. Reference: USOPM JGS for Electronic Integrated Systems Mechanic, WG-2610, Jul 81.

C. Background: Air National Guard units have reorganized to form an Aircraft Generation Division (AGD) as directed by the Air Force. This position is redescribed to reflect these changes. It covers positions assigned to C-5, C-130 (H models and those with SCNS modification), C-141, and KC135 aircraft.

D. Occupational Code, Title and Grade Determination:

1. Occupational Code:

a. The 2610 occupation covers nonsupervisory jobs involved in rebuilding, overhauling, troubleshooting, repairing, modifying, calibrating, aligning, and maintaining integrated electronics systems, i.e., systems where the output of a number of sensor subsystems is integrated in a logic subsystem and the resultant used to modify the operation of the total system. Critical to the determination that a system is "integrated" are the types of subsystems and signal paths by which they are connected. An electronic integrated system must have a number of sensing subsystems, one or more actuating subsystems, and a central data processing subsystem. The computer receives the output from the sensors, combines the information, and directs the operation of the actuators. The computer then receives feedback information, either directly or through the sensors, by which it monitors performance and modifies the operations of the actuator.

b. The determination as to whether or not a job that belongs in the Electronic Equipment Installation and Maintenance Family should be classified by reference to the 2600 job grading standard is based on two factors:

(1) The electronic systems worked on must be combined in a manner that meet the definition of an electronic integrated system.

(2) The mechanic must demonstrate the ability to work on the total integrated system and perform that work on a regular and recurring basis.

c. This position works on one or more complete electronic integrated systems associated with the assigned aircraft. All aircraft covered by this description have at least one system that meets the WG-2610 code definition of integrated system (i.e., Fuel Savings

Advisory System (FSAS) on the C-5, C-141, and KC-135 and Self Contained Navigation System (SCNS) on some C-130s).

(1) The FSAS is a flight management system. Using engine pressure ratio data, total air temperature data, TACAN data, inertial navigation system data, altitude and airspeed data, fuel flow data, and desired plan data, the system will compute the most efficient flight profile for the aircraft. It includes climb, cruise, descent, and transition coupling to the autopilot and climb, cruise, and transition coupling to the automatic throttle system. The primary sensor subsystems are the TACAN, inertial navigation systems (INS) and central air data computer (CADC). The primary actuator subsystems are the automatic flight control system and automatic throttle system. The fuel savings computer (FSC) is the integrating force that combines several subsystems into an integrated system. Various portions of the system are connected in an information loop so that information detected triggers an action by another portion of the system which then feeds back and updates the initial information.

(2) The SCNS performs automated flight planning, highly precise inertial and Doppler navigation, route of flight guidance and manual or autopilot steering, centralized communication/navigation radio control and display, automatic air release point computation and deliver, nonprecision approach calculation, search and rescue pattern calculation and steering, airborne rendezvous calculation and steering, and extensive built-in testing. The primary sensor systems are the ring laser gyro inertial navigation system, TACAN, a Doppler velocity sensor, VOR/IRS, compass, station keeping equipment, and air data computer. The primary actuator subsystem is the automatic flight control system. The Bus Integration Computer Unit (BICU) provides the system interface which tie the subsystems together into an integrated system through the MIL-STD-1553B data bus.

2. Title: The title for jobs in the WG-2610 occupation is Electronic Integrated Systems Mechanic.

3. Grade: The four factors used in grading positions in the WG-2610 code are Skill and Knowledge, Responsibility, Physical Effort, and Working Conditions. The first two factors are used in grading this position since Physical Effort and Working Conditions are the same at all grades covered by the standard.

a. Skill and Knowledge:

(1) Grade 12 mechanics repair, overhaul, modify and troubleshoot ground, shipboard, or airborne electronic systems composed of a number of individual subsystems (e.g., radar, computers, gyro, inertial sensing units, launching control units, etc.) which are linked together and interrelated so that their combined functions accomplish a specific objective and comprise a complete system such as fire control, ballistic missile control, missile guidance, air traffic control, dead

reckoning navigation or bomb navigation. At this grade level the incumbent has extensive knowledge of electronic, pneumatic, hydraulic and mechanical systems. They have the ability to follow drawings for integrated electronic systems, and diagnose and determine needed repairs for malfunctions in electronics systems where a knowledge of the entire system is necessary to interpret error data, trace and locate the deficiency. Grade 13 mechanics perform trouble analysis and final alignment of multisystem complexes consisting of several complete integrated systems which are further combined by an electronic logic device which can automatically select the necessary data, evaluate the influence of the data on the objective or objectives, issue control impulses, and monitor performance of the affected integrated systems.

(2) Incumbents of this position troubleshoot, inspect, maintain, overhaul, repair, align and modify substantially all of the subsystems integrated with one or more integrated systems. The work requires considering the interaction of the subsystems worked upon with the total integrated aircraft system. Incumbents utilize this knowledge of the complete integrated system in their day-to-day work. Although in some cases the incumbent may work on more than one integrated system, the complete electronics package for the aircraft does not achieve the extremely complex relationships depicted for the WG-13 grade. Therefore, the position meets the WG-12 level.

b. Responsibility: WG-12 mechanics receive oral and written assignments and general discussion of the work to be performed. They exercise judgment and independence in determining solutions to maintenance and repair problems. The mechanics in the Avionics Guidance and Control Section receive assignments in the form of work orders, inspection reports, and oral instructions. They plan their own work sequences and otherwise carry assignments through to completion. Work is reviewed for acceptability and adherence to instructions. This factor closely matches the WG-12 level.

E. Conclusion: Based on the above evaluation, this position is classified as Electronic Integrated Systems Mechanic, WG-2610-12.

Classifier: Roger M. Parrish    Region: NGB-HR-WC    Date: 28 Feb 95